

1. (Amended) An environmentally compatible process for treating plant matter and foodstuffs, during storage, distribution and marketing, preplanting, growing, and pre and post harvest, to increase yields and yields of marketable sizes, eliminate health hazards, <sup>operated</sup> impart storage stability, extend shelf life and inhibit premature sprouting, rooting, "black-heart" formation, germination, blossoming, and losses in quality and/or quantity of said plant matter and foodstuffs as result of premature sprouting, rooting, "black-heart" formation, germination and blossoming, said plant matter and foodstuffs including tubers, bulbs, seeds, grains and other germinating materials, plant vegetative propagation materials, and fruits and vegetables, by treating the said plant matter or foodstuffs, during storage, distribution and marketing, preplanting, growing, and pre and post harvest, with an effective aqueous dosage solution comprising an effective concentration of hydrogen peroxide, and optionally comprising an effective dosage of one or more additional components selected from the group consisting of:

- (i) trace concentrations of dispersed metals or metal ions;
- (ii) other and/or additional hydrogen peroxide activators, synergists and promoters;
- (iii) hydrogen peroxide stabilizers and modifiers;

~~(iv) pH regulators; and  
(v) organic and/or inorganic additives,  
wherein the effective concentration of hydrogen peroxide, time  
of treatment and form of application are such as to prevent  
such plant matter and foodstuffs quality and/or quantity loss,  
but at the same time not so high as to cause or induce damage  
to the plant matter and foodstuffs themselves.~~

Sub  
D1  
~~6. (amended) A process as in claim 1, wherein the  
optional metals or metal ions are present in a concentration  
in the range from 1 ppb to 50,000 ppm.~~

B2  
~~7. (amended) A process as in claim 6, wherein the  
metals or metal ions concentration is in the range from 10 ppb  
to 20,000 ppm.~~

~~8. (amended) A process as in claim 6, wherein the  
metals or metal ions concentrations is in the range from 50  
ppb to 1,000 ppm.~~

~~9. (amended) A process as in claim 6, wherein the  
metal ion is silver ion.~~

Sub  
B3  
~~12. (amended) A process as in claim 1 in which the  
treatment solution contains in addition to said hydrogen  
peroxide, one or more of said optional dispersed metals, metal~~

ions or additives selected from the group consisting of copper, zinc, nickel, iron, potassium, manganese, silver, chromium, molybdenum, magnesium, boron, phosphorus, iodine, sulfur, citrate and combinations thereof.

13. (amended) A process as in claim 1 in which the treatment solution contains in addition to said hydrogen peroxide and said dispersed metals or metal ions, one or more of trace activator stabilizers or modifiers.

B3  
at  
14. (amended) A process as in claim 1 in which the treatment solution contains in addition to said hydrogen peroxide and said dispersed metal or metal ions, one or more pH regulators selected from the group consisting of mineral acids and organic acids, said mineral acids comprising phosphoric acid, nitric acid, hydrochloric acid and sulfuric acid and said organic acids comprising peracetic acid.

15. (amended) A process as in claim 1 in which the treatment solution contains in addition to said hydrogen peroxide and said dispersed metal or metal ions, phosphoric acid.

Sub D1  
B4  
43. (amended) A product treated according to the process of claim 1.

44. (amended) A process for {inhibiting premature sprouting and enhancing the productivity in plant growth material by effecting Apical Dominance Breakdown in said plant growth material,} comprising

treating the plant growth material with an effective aqueous dosage comprising an effective concentration of hydrogen peroxide, and optionally comprising one or more additional components selected from the group consisting of:

- (i) effective trace concentrations of dispersed metals or metal ions;
- (ii) effective concentrations of other and/or additional hydrogen peroxide activators, synergists and promoters;
- (iii) effective concentrations of hydrogen peroxide stabilizers and modifiers;
- (iv) effective concentrations of pH regulators;
- (v) effective concentrations of organic and/or inorganic additives.

45. (amended) A process for effecting Apical Dominance Breakdown in a plant growth material selected from the group consisting of potatoes, potato tubers, potato growth parts, comprising treating the potatoes, potato tubers, or potato growth parts in accordance with claim 1.

46. (amended) A product selected from the group consisting of potatoes, potato tubers and potato growth parts, treated to bring about Apical Dominance Breakdown in accordance with claim 1.

B4 cut  
47. (amended) A composition for treating in an environmental friendly manner, plant matter and foodstuffs, during storage, distribution and marketing, preplanting, growing, and pre and/or post harvest, to increase yields, eliminate health hazards, impart storage stability, extend shell life and inhibit premature sprouting, rooting, "black-heart" formation, germination, blossoming, decay, pathogenic losses and other processes causing losses in quality and/or quantity of said plant matter and foodstuffs, and promote apical dominance breakdown, said plant matter and foodstuffs including tubers, bulbs, seeds grains and other germinating materials, plant vegetative propagation materials, various fruits and vegetables, said composition being also suitable to treat earth, other growth media and substrates, equipment, materials, water, spaces and surfaces to reduce and eliminate harmful organisms and substances therefrom, comprising

→  
Apical dominance

(a) 0.001% to 50% of hydrogen peroxide

(b) 0.001% to 5% of metal ion selected from the group consisting of copper, zinc, nickel, iron, manganese,

molybdenum, potassium and combinations thereof, and optionally one or more of

- (i) effective trace concentrations of other dispersed metals or metal ions;
- (ii) effective concentrations of other and/or additional hydrogen peroxide activators, synergists and promoters;
- (iii) effective concentrations of hydrogen peroxide stabilizers and modifiers;
- (iv) effective concentrations of pH regulators;
- (v) effective concentrations of organic and/or inorganic additives.

48. (amended) A composition for treating in an environmental friendly manner, plant matter and foodstuffs, during storage, distribution and marketing, preplanting, growing, and pre and/or post harvest, to increase yields, eliminate health hazards, impart storage stability, extend shelf life and inhibit premature sprouting, rooting, "black-heart" formation, germination, blossoming, decay, pathogenic losses and other processes causing losses in quality and/or quantity of said plant matter and foodstuffs, and promote apical dominance breakdown, said plant matter and foodstuffs

including tubers, bulbs, seeds grains and other germinating materials, plant vegetative propagation materials, various fruits and vegetables including solanaceous fruits and vegetables, said composition being also suitable to treat earth, other growth media and substrates, equipment, materials, water, spaces and surfaces to reduce and eliminate harmful organisms and substances therefrom, comprising

- (a) 0.001% to 50% of hydrogen peroxide
  - (b) 0.001% to 2.5% of silver ion
  - (c) 0.001% to 2.5% of metal ion selected from the group consisting of copper, zinc, nickel, iron, manganese, molybdenum, potassium and combinations thereof
- and optionally one or more of

- By cut
- (i) effective trace concentrations of other dispersed metals or metal ions;
  - (ii) effective concentrations of other and/or additional hydrogen peroxide activators, synergists and promoters;
  - (iii) effective concentrations of hydrogen peroxide stabilizers and modifiers;
  - (iv) effective concentrations of pH regulators;

(v) effective concentrations of organic and/or inorganic additives.

49. (amended) An environmentally compatible process for reducing and eliminating harmful organisms and substances from earth and other growth media and substrates, by treating the said earth, other growth media and substrates, with an effective dosage of a composition comprising an effective concentration of hydrogen peroxide and optionally comprising, an effective dosage of one or more additional components selected from the group consisting of:

- (i) trace concentrations of dispersed metals or metal ions;
- (ii) other and/or additional hydrogen peroxide activators, synergists and promoters;
- (iii) hydrogen peroxide stabilizers and modifiers;
- (iv) pH regulators; and
- (v) organic and/or inorganic additives.

54. (amended) An environmentally compatible process for treating plant matter and foodstuffs, during storage, distribution and marketing, preplanting, growing, and pre and post harvest, to increase yields and yields of marketable sizes, eliminate health hazards, impart storage stability, extend shelf life and inhibit pathogenic losses and



other processes causing losses in quality and/or quantity of said plant matter and foodstuffs, said plant matter and foodstuffs including tubers, bulbs, seeds grains and other germinating materials, plant vegetative propagation materials, and various fruits and vegetables, by treating the said plant matter or foodstuffs, during storage, distribution and marketing, preplanting, growing, and pre and post harvest, with a synergistic effective aqueous dosage solution comprising

an effective concentration of hydrogen peroxide, and silver ion, and optionally further comprising an effective dosage of one or more additional components selected from the group consisting of:

- (i) trace concentrations of dispersed metals or metal ions;
- (ii) other and/or additional hydrogen peroxide activators, synergists and promoters;
- (iii) hydrogen peroxide stabilizers and modifiers;
- (iv) pH regulators; and
- (v) effective concentrations of organic and/or inorganic additives,

wherein the effective concentration of hydrogen peroxide, time of treatment and form of application are such as to prevent such plant matter and foodstuffs quality and/or quantity loss,

but at the same time not so high as to cause or induce damage to the plant matter and foodstuffs themselves.

55. (amended) A product treated according to the process of claim 54.

56. (amended) An environmentally compatible process for reducing and eliminating harmful organisms and substances from equipment, materials, water, spaces and surfaces by treating said equipment, materials, water, spaces and surfaces with an effective dosage of a synergistic composition comprising

an effective concentration of hydrogen peroxide, silver ion, an effective trace concentrations of dispersed metals or metal ions other than silver, and optionally comprising an effective dosage of one or more additional components selected from the group consisting of:

- (i) other and/or additional hydrogen peroxide activators, synergists and promoters;
- (ii) hydrogen peroxide stabilizers and modifiers;
- (iii) pH regulators;
- (iv) organic and/or inorganic additives.

In place of cancelled claims 10 and 11, add the following new claims: